PCT/IB2002/005257

WO 2003/055453

"Process for the preparation of cosmetics"

Technical field

This invention concerns a new process for the preparation of make-up cosmetics such as eye shadow, face powder and blusher.

In particular, the invention concerns a process for the preparation of a cosmetic with a solid consistency and an excellent powdery marking effect, said process comprising extruding and drying a paste-type mixture and subsequent processing the solid product obtained.

Background of the invention

Face and body make-up cosmetics such as blusher and eye shadow are known. These products are normally produced in the form of pressed or non-pressed powders.

Both these processes result in products that offer both advantages and disadvantages, for example:

- pressed powders have the advantage that they are easy to apply but on the other hand after being used for some time they tend to crumble, dirtying the container and the objects with which they come into contact;
- non-pressed powders require a certain amount of skill for their application as they are designed for a more professional use but the containers wherein they are packaged are provided with fastenings that prevent the product leaking out.

Summary of the invention

It has now surprisingly been found that via a multi-phase process, comprising mixing, extruding and drying, make-up cosmetics can be obtained free from the problems of the conventional products and with a solid consistency so that they can be produced in different formats; the process also results in products that are easy to apply and at the same time have a good powdery marking effect.

Thus, according to one of its aspects, the invention concerns a process for the preparation of a cosmetic that comprises extruding a paste obtained by mixing at least fats for cosmetic use, colouring powders and at least one solvent for cosmetic use, and subsequently drying the extruded product.

Detailed description of the invention

According to one embodiment, the invention concerns a process for the preparation of a cosmetic that comprises extruding of a paste obtained by mixing an emulsion of fats for cosmetic use with colouring powders and drying of the extruded product.

In further detail, the invention concerns a process for the preparation of a cosmetic that comprises:

a) preparing the two phases, herein called "colouring powders" and "fatty emulsion";

b) mixing said phases;

c) extruding the paste obtained;

d) drying the extruded product;

e) sizing the dried product if required.

The "fatty emulsion" according to this invention can be obtained by treating fats for cosmetic use with at least one solvent, for example water or any solvent suitable for cosmetic use, including their mixtures; the essential feature of the solvent used is that it is possible to eliminate it by drying after extrusion at temperatures that do not alter the end product, advantageously at temperatures not exceeding 50°C.

The solvent can be neutral or coloured, in the latter case either due to its specific properties or by the addition of colouring substances. Water, being readily available and inexpensive, is the preferred solvent for this invention.

According to this invention, the expression "fats for cosmetic use" indicates any fatty material suitable for the preparation of cosmetics such as the esters of fatty acids, triglycerides, waxes, fruit and seed oil derivatives and extracts etc.

Fats for cosmetic use useful according to the invention are, for example, sorbitan stearate, isopropyl stearate, caprylic/capric triglycerides, dipentacrythrityl hexahydroxystearate/ stearate rosinate (sold under the trademark Cosmol 168AR), magnesium myristate and olive oil.

According to this invention, the expression "colouring powders" indicates any powder, or mixture of powders, containing colouring pigments suitable for cosmetic use.

Suitable colouring powders are, for example, those obtained by mixing synthetic and/or natural pigments, matte or pearly, with inert powders as diluents such as mica or talc, in varying quantities according to the powdery effect and colouring power required.

The pearly and colouring substances that can be used include the following, for example:

TiO2 (CI 77891) + mica (CI 77019)

Bismuth oxychloride CI 77163

Mica CI 77019

Copper and bronze powder CI 7740

Iron oxide CI 77491-2-9

Ultramarine blue CI 77007

Manganese violet CI 77742

Chromium hydrate oxide CI 77289

Anhydrous chromium oxide CI 77288

Ferric ferrocyanide CI 77510

Titanium dioxide CI 77891

D&C red no. 7 Ca lake CI 15850:1
D&C red no. 19 Al lake CI 45170:3
D&C red no. 6 Ba lake CI 15850:2
D&C red no. 3 Al lake CI 45430:1
D&C red no. 9 Ba lake CI 15585:1
D&C red no. 21 Al lake CI 45380:3
D&C yellow no. 5 Al lake CI 19140:1
D&C red no. 30 Al lake CI 73360
D&C yellow no. 10 Al lake CI 47005:1
D&C red no. 27 Al lake CI 45410:2
D&C yellow no. 5 Al lake CI 19140:1
D&C orange 5 CI 45370:1
FD&C yellow no. 6 Al lake CI 15985:1
FD&C blue no. 1 Al lake CI 42090:2
D&C red 36 CI 12085
Carmine CI 75470

It is evident that the paste to be extruded can be obtained either by mixing each individual component, one after the other, in a mixer for example, or by first preparing the two "fatty emulsion" and "colouring powders" phases and then mixing them.

The quantity of individual components can vary within a wide range according to the type of product required.

The "fatty emulsion" and "colouring powders" phases are preferably mixed in equal quantities, i.e. 50-50% by weight.

Extruding process of this invention can be performed by passing the paste (neutral or coloured) obtained in phase (b) through a normal extruder (or drawing machine) to obtain a semi-solid product, still damp, of the required shape.

The extruders useful in the process of the invention are, for example, piston or screw extruders. The product comes out of the extruder in different shapes according to the dies used (for example cylinder, parallelepiped etc.) and is cut to the required length.

The drying phase of the process of the invention can be performed according to the conventional techniques, for example:

- in an oven
- under vacuum, or
- with fluidised bed

provided that said process creates conditions that ensure the evaporation of almost all the solvent used for preparation of the paste to be extruded, whatever it is. Obviously lower temperatures require longer drying times whereas at higher temperatures drying times will be shorter. The drying (or baking) will be preferably performed at low temperatures in order to permit slow elimination of the solvent from the paste and to obtain a well-pressed and uniform end product, without altering the end product.

Advantageously, the drying is performed in an oven at temperatures of 35-55°C, around 40°C for example, until almost complete evaporation of the solvent, for example until the residual humidity is below or equal to 5%.

According to a preferred embodiment, the invention concerns a process for the preparation of a cosmetic comprising:

- preparation of a paste in a mixer by mixing an emulsion of fats for cosmetic use with colouring powders;
- extrusion of the paste formed as above by means of an extruder or drawing machine according to various shapes and sizes;

- drying of the extruded products in an oven at a temperature of between 35 and 55°C until a residual humidity lower than or equal to 5% is obtained;
- if required or necessary, further processing of the dried product to give it the appropriate shape and size.

The machines and processing techniques individually used in the process of the invention are known to the skilled in the art.

Other components, inert or non-inert, can be added to the colouring powders and fatty emulsion phases of the invention or directly to the paste to be extruded. As an example, additives can be added, as solid and liquid preserving agents, such as sodium benzoate, thickeners such as starch and its derivatives, diluents, gelling agents and adhesives, in order to make the paste obtained by mixture of the two phases suitable for extrusion, various inert powders, fragrances if required, etc. Said additives and their properties and uses in the field of cosmetics are well known to the skilled in the art.

Examples of additives are given in the experimental part.

The colouring powders are generally prepared by mixing the required pigments with inert components such as talc, silica and mica. According to a preferred embodiment, parabenes and sodium dehydroacetate are added to the mixture to preserve the entire product during all the processing phases.

These components are advantageously ground for a few minutes to obtain a uniform powder.

The emulsion and the colouring powders prepared as above are then processed in a mixer and subsequently transferred to an extruder, where the dies give them the required shapes. At the extruder outlet, the product is placed preferably on sheets of inert material, wherein

"inert" means that it does not react with the product, for example PVC, steel or similar.

Extrusion is followed by drying, preferably in an oven, normally at a temperature of around 40-50°C for a time that depends on the evaporation speed, generally a few days.

Once drying has been completed, the product can be visually checked to identify any defects and hardness can be checked by means of a dynamometer.

The cosmetics prepared in this way can be further processed if necessary in order to reduce their dimensions or modify their shape, for example. These further operations can be performed manually or by means of appropriate machine tools.

The process of the invention therefore permits the production of cosmetics for decorative or curative make-up with the following characteristics:

- optimal consistency permitting direct application
- excellent marking effect and, at the same time,
- a creamy finish even though the products are powder-based.

The products obtained by means of the process of the invention therefore represent a valid alternative to the conventional products such as in pressed or non-pressed powders and creamy type products.

The following examples are provided for the purpose of illustrating the invention without limiting it in any way. It is understood that technically equivalent alternatives within the capacity of the skilled in the art, even if not explicitly mentioned, fall within the protection of the invention. As an example, the order of preparation and mixing of the ingredients in the process can be arbitrarily modified, obtaining products with the same characteristics.

EXAMPLE 1

GENERAL OPERATING METHOD

Appropriately clean and sanitise all the machinery required for the work process.

Preparation of the fatty emulsion

Weigh the water in an emulsifier; add the selected preservative and mix until fully dispersed. Add any thickeners and the mixture of liquid preservatives and disperse by means of a homogeniser. Weigh and dissolve the fatty mass (stearates, triglycerides) at approximately 60°C, add it to the previously prepared mixture and homogenise. Add the gelling agent and process for a few minutes. Check the viscosity and pour into clean drums.

Preparation of the colouring powders

Weigh the inert components, binders and any preservatives (talc, parabenes etc.) and grind for a few minutes. Weigh and add the raw materials making up the required colour and grind until obtaining a uniform mixture.

Preparation of the paste to be extruded and drying

Mix the fatty emulsion and colouring powders for approximately 10 minutes in a mixer. Empty into clean bags and extrude in the drawing machine. Bake the extruded product for 3 days at approximately 50°C.

EXAMPLE 2

Qualitative-quantitative composition of a typical paste before extrusion

Water	39.40%
Fats for cosmetic use (mixture of isopropyl stearate, di-C12-13 alkyl malate, Cosmol 168AR)	6.00%

Pigments in admixture with mica	38.4%
Xanthan gum	0.05%
Preservatives (mixture of sorbic acid and parabenes)	1.1%
Inert components (mixture of zea mays, nylon powder, talc)	14.55%
Fragrance	0.5%